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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/583,671	11/14/2006	Joachim Lohr	L7725.06114	8182

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EXAMINER	
MERED, HABTE	

ART UNIT	PAPER NUMBER
2616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary for Applications Under Accelerated Examination	Application No.	Applicant(s)	
	10/583,671	LOHR ET AL.	
	Examiner	Art Unit	
	Habte Mered	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Since this application has been granted special status under the accelerated examination program,

NO extensions of time under 37 CFR 1.136(a) will be permitted and a SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE:

ONE MONTH OR THIRTY (30) DAYS, WHICHEVER IS LONGER,
FROM THE MAILING DATE OF THIS COMMUNICATION – if this is a non-final action or a *Quayle* action.
(Examiner: For **FINAL** actions, please use PTOL-326.)

The objective of the accelerated examination program is to complete the examination of an application within twelve months from the filing date of the application. Any reply must be filed electronically via EFS-Web so that the papers will be expeditiously processed and considered. If the reply is not filed electronically via EFS-Web, the final disposition of the application may occur later than twelve months from the filing of the application.

Status

1)☒ Responsive to communication(s) filed on *21 June 2006*.

2)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

3)☒ Claim(s) *37-78* is/are pending in the application.

3a) Of the above claim(s) _____ is/are withdrawn from consideration.

4)☐ Claim(s) _____ is/are allowed.

5)☒ Claim(s) *37-78* is/are rejected.

6)☐ Claim(s) _____ is/are objected to.

7)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

8)☐ The specification is objected to by the Examiner.

9)☒ The drawing(s) filed on *21 June 2006* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

10)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

11)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

- See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *See Continuation Sheet*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :6/21/06,6/26/06,11/20/06,7/25/07.

DETAILED ACTION

1. The preliminary amendment filed on 6/21/2006 has been entered and fully considered. Consequently claims 1-36 have been cancelled.

2. Claims 37-78 are pending. The base independent claims are 37, 58, and 76,

Drawings

Figures 1-8 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. For instance, Applicant's Figure 5 is identical to Figure 1 of TSG-RAN Working Group #38 and Applicant's Figure 8 is identical to Figure 7.1 of 3GPP TR 25.896 V6.0.0 (2004-03). Further the related art section of the specification readily admits that the Figures are based on what is taught by the various standard bodies. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

1. Claims 77 and 78 objected to because of the following informalities: Claims 77 and 78 are directed towards a computer readable storage medium but depend on parent claims 37 and 72 respectively and the parent claims are method claims. Appropriate correction is required.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 37-78 are rejected under 35 U.S.C. 103(a) as being unpatentable over NEC (NEC, "Scheduler Requirement and Principles", TSG-RAN-Working Group 2, June 2004) in view of Haumont et al (US 7, 023, 825 B1), hereinafter referred to as Haumont.

NEC discusses the MAC-d flow scheduling requirements.

3. Regarding **claim 37**, NEC discloses a method for scheduling transmissions of a plurality of mobile terminals in a mobile communication system, wherein each mobile terminal transmits data of a flow being mapped on a dedicated uplink channel to a base station, the method comprising **(See Section 2.3 and Figure 3)**: receiving a scheduling request from at least one of the mobile terminals at the base station **(RR1 from UE1 and RR2 from UE2 where RR is the standard Rate Request message and indeed Applicant in paragraph 72 of the specification rate up command is indeed a scheduling request)** , wherein the scheduling request comprises an identifier identifying the flow. **(In Figure 3 the Rate Request (RR) and the Rate Grant (RG) is done strictly on a Mac-d flow basis and the flow is identified for each request as TrCH1 and TrCH2 respectively)**

NEC fails to disclose receiving QoS information related to the flow at the base station, scheduling by the base station the transmissions of the of the mobile terminals

based on the identifier and the QoS information related to the flow identified by the identifier.

Haumont teaches controlling quality of service in mobile communication.

Haumont discloses receiving QoS information related to the flow at the base station **(See Figures 3 and 4 and already it is established by the 3GPP that QoS information per UE is established when the UE registers as indicated by Applicant in Paragraph 66 of the specification and it is only the Network element that establishes this QoS values per flows for the Applicant and it is the same case for Haumont as shown in Figures 5 and 6 the PDP context that contains the QoS profiles is created by the network element SGSN)**, scheduling by the base station the transmissions of the of the mobile terminals based on the identifier and the QoS information related to the flow identified by the identifier. **(See Column 13:1-32)**

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify NEC's method by receiving QoS information related to the flow at the base station, scheduling by the base station the transmissions of the of the mobile terminals based on the identifier and the QoS information related to the flow identified by the identifier. The motivation to have flow based QoS is to provide a QoS for an entire application instead on a packet basis as indicated by Haumont Column 6:55-65.

2. Regarding **claim 58**, NEC discloses a base station **(Node B –Figure 3 – See Section 2.3)** for scheduling a plurality of transmissions of a plurality of mobile terminals **(Figure 3 – UE1 and UE2)** in a mobile communication system, wherein each mobile

terminal transmits data of a flow being mapped on a dedicated uplink channel to a base station **(See Figure 3)**, the base station comprising: a communication unit scheduling request from at least one of the mobile terminals, wherein the scheduling request comprises an identifier identifying the flow, **(In Figure 3 the Rate Request (RR) and the Rate Grant (RG) is done strictly on a Mac-d flow basis and the flow is identified for each request as TrCH1 and TrCH2 respectively)**

NEC fails to disclose a base station with a communication unit operable to receive QoS information related to the flow a scheduling unit operable to schedule the transmissions of the mobile terminals based on the identifier and the QoS information related to the flow identified by the identifier.

Haumont disclose a base station with a communication unit operable to receive QoS information related to the flow **(See Figures 3 and 4 and already it is established by the 3GPP that QoS information per UE is established when the UE registers as indicated by Applicant in Paragraph 66 of the specification and it is only the Network element that establishes this QoS values per flows for the Applicant and it is the same case for Haumont as shown in Figures 5 and 6 the PDP context that contains the QoS profiles is created by the network element SGSN)**, a scheduling unit operable to schedule the transmissions of the mobile terminals based on the identifier and the QoS information related to the flow identified by the identifier. **(See Column 13:1-32)**

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify NEC's base station to have a communication unit

operable to receive QoS information related to the flow a scheduling unit operable to schedule the transmissions of the mobile terminals based on the identifier and the QoS information related to the flow identified by the identifier. The motivation to have flow based QoS is to provide a QoS for an entire application instead on a packet basis as indicated by Haumont Column 6:55-65.

3. Regarding **claim 76**, NEC discloses a computer readable storage medium for storing instructions that when executed by a processor of a base station a base station **(Node B –Figure 3 – See Section 2.3)** for scheduling a plurality of transmissions of a plurality of mobile terminals **(Figure 3 – UE1 and UE2)** in a mobile communication system, wherein each mobile terminal transmits data of a flow being mapped on a dedicated uplink channel to a base station **(See Figure 3)**, the base station comprising: a communication unit scheduling request from at least one of the mobile terminals, wherein the scheduling request comprises an identifier identifying the flow, **(In Figure 3 the Rate Request (RR) and the Rate Grant (RG) is done strictly on a Mac-d flow basis and the flow is identified for each request as TrCH1 and TrCH2 respectively)**

NEC fails to disclose a base station with a communication unit operable to receive QoS information related to the flow a scheduling unit operable to schedule the transmissions of the mobile terminals based on the identifier and the QoS information related to the flow identified by the identifier.

Haumont disclose a base station with a communication unit operable to receive QoS information related to the flow **(See Figures 3 and 4 and already it is established by the 3GPP that QoS information per UE is established when the UE registers as**

indicated by Applicant in Paragraph 66 of the specification and it is only the Network element that establishes this QoS values per flows for the Applicant and it is the same case for Haumont as shown in Figures 5 and 6 the PDP context that contains the QoS profiles is created by the network element SGSN), a scheduling unit operable to schedule the transmissions of the mobile terminals based on the identifier and the QoS information related to the flow identified by the identifier. **(See Column 13:1-32)**

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify NEC's computer readable storage medium for storing instructions that when executed by a processor of a base station to have a communication unit operable to receive QoS information related to the flow a scheduling unit operable to schedule the transmissions of the mobile terminals based on the identifier and the QoS information related to the flow identified by the identifier. The motivation to have flow based QoS is to provide a QoS for an entire application instead on a packet basis as indicated by Haumont Column 6:55-65.

4. Regarding **claims 38 and 59**, NEC discloses a method, wherein the flow is a logical channel mapped on the dedicated uplink channel and the identifier identifies the logical channel. **(The logical channels are the Mac-d flows and are discussed clearly in section 2.3)**

5. Regarding **claims 39 and 60,** NEC discloses a method wherein the flow has a priority**. (See Section 4, second bullet item)**

6. Regarding **claims 40 and 61**, NEC discloses a method, wherein the flow is multiplexed on a MAC-d flow. **(Already admitted as prior art and see Section 6)**

7. Regarding **claim 41,** NEC discloses a method, wherein the QoS information comprises a transmission mode associated with the data of the flow. **(See Section 9)**

8. Regarding **claim 42**, NEC discloses a method wherein the transmission mode indicates whether data of the flow is transmitted applying an additional gain factor. **(See Section 9 – mode 2)**

9. Regarding **claims 43 and 62**, NEC discloses a method wherein the scheduling request further comprises information on buffer occupancy at the mobile terminal and on a transmission power at the mobile terminal. **(See Sections 9 and 10 – mode 2)**

10. Regarding **claim 44**, NEC discloses a method wherein the scheduling request received by the base station is transmitted via MAC control signaling. **(See Section 6)**

11. Regarding **claims 45, 63, 72, and 74**, NEC disclose a method, further comprising transmitting a scheduling assignment from the base station to at least one of the mobile terminals from which a scheduling request has been received at the base station, wherein the scheduling assignment indicates a uplink resource allocated to the mobile terminal on the dedicated uplink channel. **(The Resource Grant, RG, message in Figure 3 teach the limitation)**

12. Regarding **claims 46, 64, 73 and 75**, the combination of NEC and Haumont disclose a method wherein the QoS information is received from a network element terminating the radio resource control signaling of at least one of the mobile terminals.

(The Applicant admits in paragraph 66 this is prior art and Haumont shows that is the case in Figures 5 and 6)

13. Regarding **claims 47 and 65**, the combination of NEC and Haumont disclose a method wherein the QoS information is included in a configuration message. **(Haumont shows in Figures 5 and 6 PDP Context Request serves as a configuration message and Applicant admits that QoS is setup by message sent from the network element at the time of the UE registration or bearer channel setup per 3GPP standard)**

14. Regarding **claim 48**, the combination of NEC and Haumont disclose a method, wherein the QoS information is received by the base station from the network element terminating the radio resource control signaling in a radio link setup message or a radio link reconfiguration message. **Haumont shows in Figures 5 and 6 PDP Context Request serves as a configuration message and Applicant admits that QoS is setup by message sent from the network element at the time of the UE registration or bearer channel setup per 3GPP standard)**

15. Regarding **claims 49 and 66**, the combination of NEC and Haumont disclose a method, wherein the QoS information is received from a serving radio network controller. **(The Applicant admits in paragraph 66 this is prior art and Haumont shows that is the case in Figures 5 and 6)**

16. Regarding **claim 50**, NEC discloses a method, wherein the flow is associated to at least one radio bearer between the mobile terminal and the network element terminating the radio resource control signaling and the method further

comprises mapping QoS information of a radio bearer to the QoS information of the flow. **(See Figure 3 and Section 2.3)**

17. **Regarding** claim **51**, the combination of NEC and Haumont disclose a method, wherein the mapping of the QoS information comprises taking into account uplink delays on the interface between the base station and the network element terminating the radio resource control signaling. **(See Haumont's Figure 5 and 6 Context request and response)**

18. Regarding **claim 52**, NEC discloses a method wherein the flow is a MAC-d flow or a priority queue of the mobile terminal. **(See Section 2.3, 4, and 9. Further Applicant indicates that Mac-d flow is identical to the priority queue)**

19. Regarding **claims 53 and 67**. NEC discloses a method, wherein pluralities of flows are multiplexed onto a single dedicated uplink channel by a mobile terminal and the scheduling request comprises an identifier identifying the highest priority flow. **(NEC teaches the multiplexing as shown in sections 2.3, 6, and 9. NEC is based on TR25.986 V6.0.0 (2004-3) teaches taking the highest QoS in section 7.2.2 and hence the limitation is a consequence of the 3 GPP standard)**

20. Regarding **claims 54 and 68**, NEC discloses a method, wherein the highest priority flow has the highest QoS demands. **(NEC is based on TR25.986 V6.0.0 (2004-3) teaches taking the highest QoS in section 7.2.2 and hence the limitation is a consequence of the 3 GPP standard)**

21. Regarding **claims 55 and 69**, NEC disclose a method, wherein the QoS information comprises at least one of a transfer delay, a guaranteed bit rate, a traffic

handling priority, a service type identification, a traffic class and a reordering release timer of the reordering buffer in the MAC entity. **(See Section 9)**

22. Regarding **claims 56 and 70**, NEC discloses a method, wherein the scheduling request further comprises a service type indicator indicating a transmission of data of the flow carrying a delay-critical service on the dedicated uplink channel. **(See Section 9 – Mode 2)**

23. Regarding **claims 57 and 71**, NEC discloses a method, further comprising considering a predetermined gain factor to be additionally applied to the transmission when scheduling the mobile terminal from which the scheduling request has been received at the base station. **(See Section 9.3.1 and mobiles operating in a boosted power mode is supported by the 3GPP. The Fujitsu paper for 3GPP TSG RAN1 and RAN2 Meetings submitted by Applicant as a prior art also completely anticipates this limitation.)**

24. Regarding **claims 77 and 78**, NEC discloses a computer readable storage medium for storing instruction that when executed by the processor cause the base station to perform the method according to claims 37 and 72 respectively **(See NEC Figure 3 Section 2.3 and Haumont's Figures 5 and 6)**

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Habte Mered whose telephone number is 571 272 6046. The examiner can normally be reached on Monday to Friday 9:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris H. To can be reached on 571 272 7629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HM
12-10-2007

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